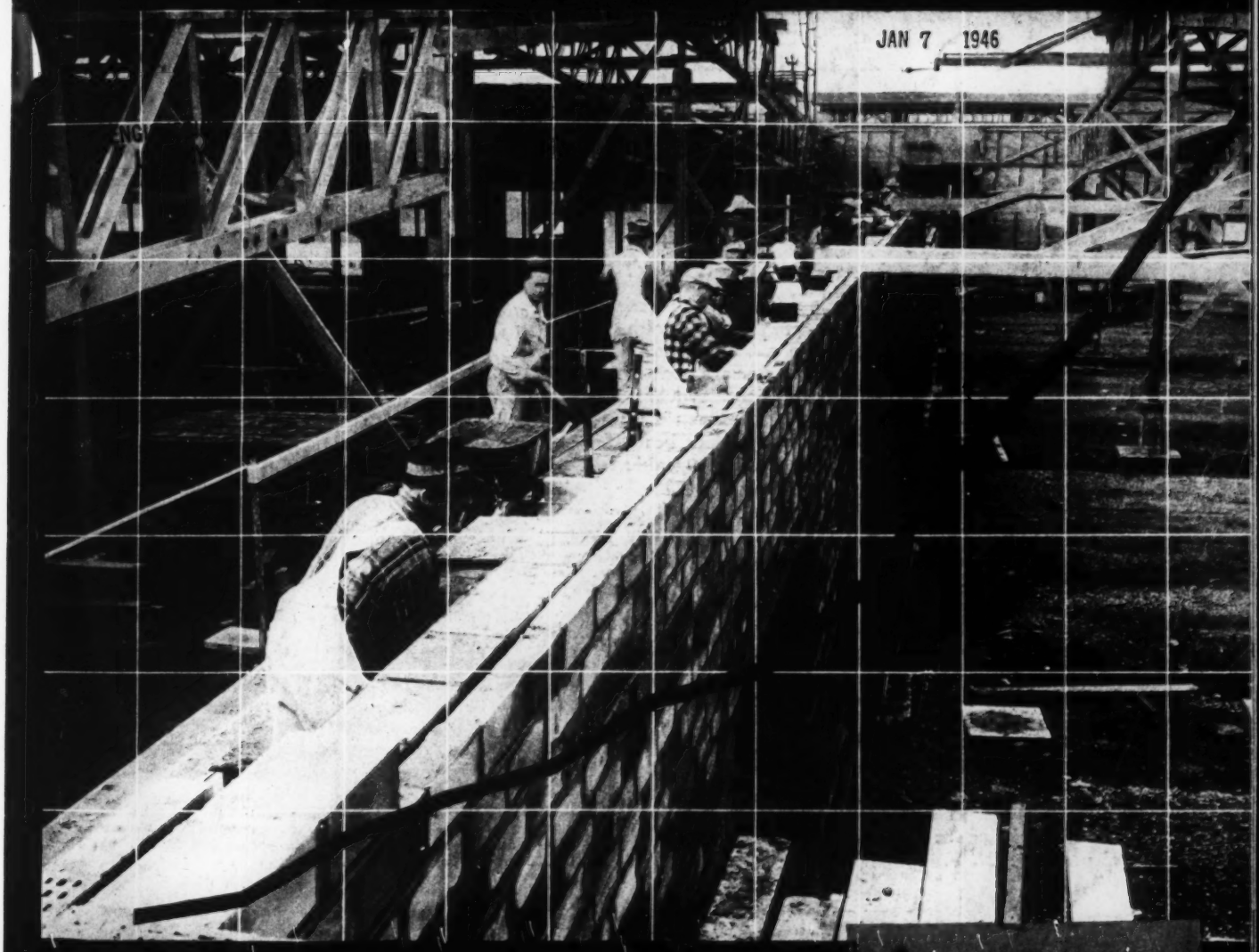
ENGINEERING NEWS-RECORD



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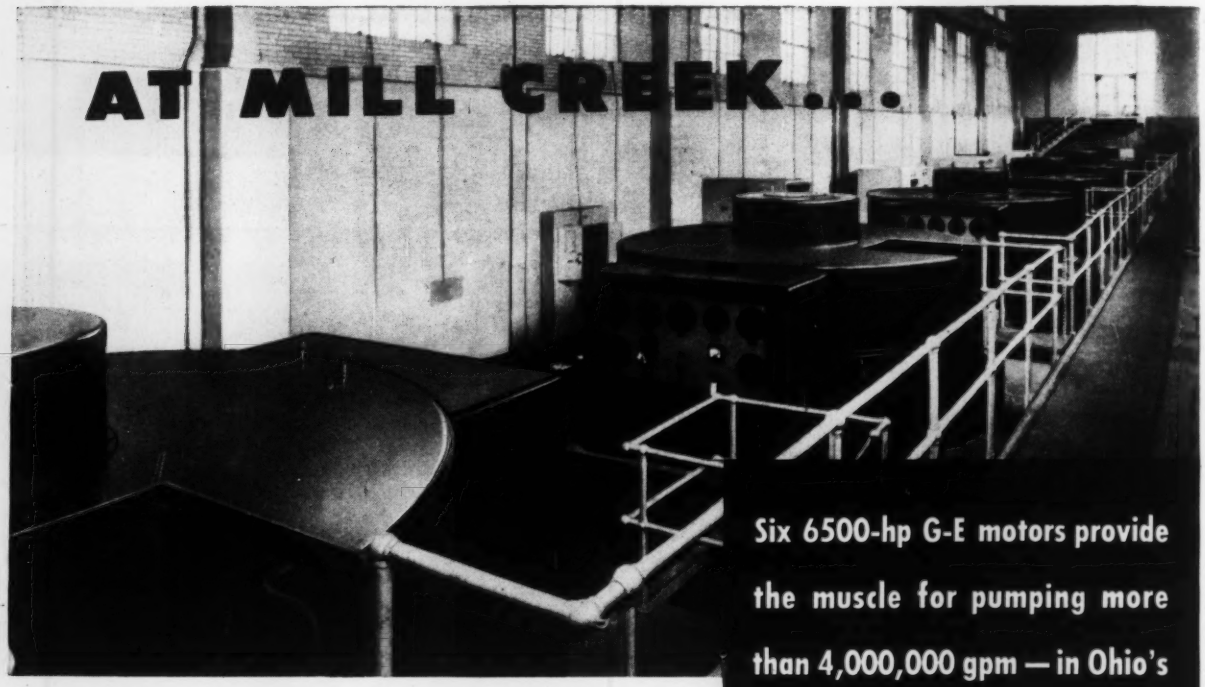


6500-hp vertical synchronous motors in Mill Creek Pumping Station. Note the use of unusual built-in gage boards with instruments for recording bearing and winding temperatures. This control system not only keeps the Ohio from backing up but also drains off excessive rainfall, melting snow, and mounting headwater that would ordinarily swamp the low valley.

Six 6500-hp G-E motors provide the muscle for pumping more than 4,000,000 gpm — in Ohio's largest flood-control project.

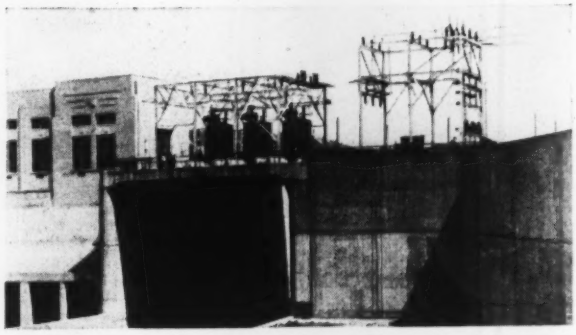
With G-E motors, control, and substation, Mill Creek Pumping Station is almost completely G-E equipped.

This Cincinnati pumping station contains most of the electric equipment to drive six S. Morgan Smith stationary-blade propeller-type pumps. The structure is the largest ever built for its purpose, as are each of the pumping units. The six 6500-hp vertical synchronous motors were designed by General Electric to operate each of the pumps against a 29-foot head, 1500 cubic feet of water per second, or 9000 cubic feet per second total.

The pumps were located below the flood level of the river, and a siphoning action occurred. This was reflected as an unusual peak in the pump's starting torque requirements. To get over this starting peak it was necessary for G-E engineers to design a motor with the proper torque characteristics, yet without increasing the size or cost of the motor. At the same time all six motors had to start without causing excessive disturbance to the power system.

But G.E.'s part didn't stop there. G-E engineers helped to design and co-ordinate the entire electric system, laying out substation equipment to supply power to the pump motors, and installing a completely co-ordinated control system, factory-assembled and tested. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

General Electric's contribution to the Mill Creek project was typical of the Company's service to the construction industry. Our engineers have worked closely with other engineers and pump manufacturers on flood-control projects since 1933. Among these are the projects at Cypress Creek and Nonconnah in Memphis, the Mississippi River project, the Deshee Ditch pumping plant near Vincennes, and the New England flood-control projects. G-E engineers stand ready to co-operate with you in your construction planning.



The Mill Creek Valley flood-control unit consists of a barrier dam at the mouth of the creek, this modern pumping station, and a large discharge bay. Located beside the pumping station are Type H 5000-kva transformers and other power-distribution equipment, with high voltage of 66,000 and low voltage of 6900.

GENERAL ELECTRIC

655-49-162

The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • JANUARY 3, 1946 • VOLUME 136 • NUMBER 1

Industrial construction hit record high in 1945

News-Record totals show an all-time high for year in private industrial building activity—Huge backlog still in reserve for coming year, report indicates

Driven by the impetus of the ending of worldwide hostilities, private industrial building volume within the continental United States for 1945 soared to a total of $635,170,000—an all-time high.

As tabulated by *Engineering News-Record's* Business News Department, the volume for the last year was 7 percent higher than the $594,000,000 total for 1940, previous record year, and 265 percent greater than the last full war year of 1944.

The 1945 total far outdistances *ENR's* own admittedly conservative estimate of several months ago (*ENR* Sept. 20, vol. p. 351) which forecast a volume for the year approaching $500,000,000 on the basis of the then-prevailing average of about $12,000,000 worth of contracts per week. Actually, the magazine's records for the half-year July 1-Dec. 31, 1945, showed projects totalling $455,000,000—all of these projects costing individually more than $40,000.

Record-breaking industrial building was also predicted by the U. S. Department of Commerce which had forecast a total private construction for the fiscal year July 1, 1945-June 30, 1946 of about $2.5 billion (*ENR* August 9, vol. p. 145). This estimate included equipment as well as construction, and projects of all sizes including those under $40,000—not recorded by *Engineering News-Record* itself.

Backlog huge

ENR's file of proposed industrial construction, carried as "backlog" on the accompanying chart, now totals $1,232,571,000—much of which may be put under actual contract during the coming six months.

However, only 29 percent of the 1945 industrial construction contract awards came out of this "backlog"—71 percent came into contract status direct without having been first reported as "proposed" in the columns of this magazine. This would indicate, statisticians said, that the "backlog" total represents only about 30 percent of the actual total of industrial construction contemplated.

The effect of the cessation of the war is reflected sharply in the figures.

Up to the end of the war with Germany, May 8, the weekly industrial building average was $6,000,000. Between May 8 and the surrender of Japan in mid-August, the rate jumped to between $10,000,000 and $12,000,000.

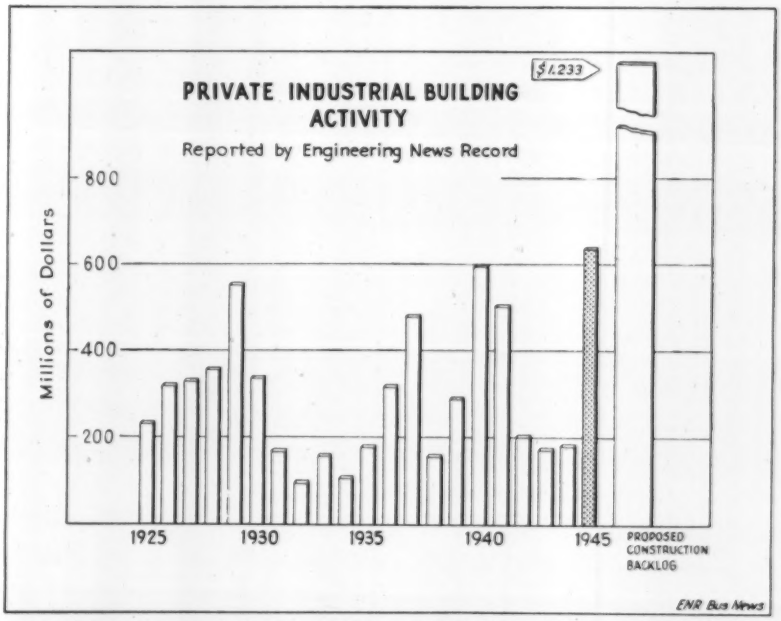
During the remainder of the year, the rate rocketed to an average of $21,000,000 per week. Month-to-month cumulative totals reported by *ENR* give a more detailed picture:

January, $24.9 (million); Feb., $39.5; March, $81.4; April, $112.8; May, $132.3; June, $180.7; July, $202.2; August, $263.6; Sept., $362.0; Oct., $437.6; Nov., $545.7; Dec. $635.2.

Almost immediate relaxation of controls over construction and construction materials (*ENR* Sept. 20, vol. p. 351) and cancelling of war contracts contributed heavily to the spurt in private construction.

Reclamation Bureau paid for Yangtse River work

The Bureau of Reclamation has received a payment of $250,000 from the government of China to cover initial costs of planning a basin-wide development program for the Yangtse River Valley. The payment was made in accordance with a recently-negotiated contract whereby the bureau will prepare plans for extensive irrigation and hydro-electric facilities to conserve and control waters of the Yangtse (*ENR* Dec. 13, 1945, vol. p. 771). The estimated cost of planning is $500,000, and the initial payment, made by the National Resources Commission of China, will permit work to go ahead at once.



Industrial construction in the year 1945 exceeded all previous records, rising to a total of $635,170,000. As the year 1946 opened, the amount of proposed industrial contruction was well over one billion dollars.

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Construction—The Pennsylvania and Baltimore and Ohio railroads approved plans for a $1,000,000 Union Depot at *Akron, Ohio.* . . . Tishman Realty Co., in *New York City*, bought land for a $5,000,000, 21-story, air-conditioned office building. . . . White Motor Co. plans a $2,500,000 manufacturing plant at *Cleveland, Ohio.* . . . B. F. Goodrich Co. announced it would build a $4,000,000 plastics processing plant near *Marietta, Ohio.* . . . Westinghouse Electric Co. said it would build a $2,400,000 plant at *Lester, Pa.* . . . Hospital buildings to cost $5,000,000 will be erected at *Los Angeles, Calif.* by the Medical Memorial Hospital Association of Southern California. . . . Yale and Towne Manufacturing Co. plans a $10,000,000 plant in northeast *Philadelphia, Pa.* . . . Housing Enterprises of Canada, Ltd., plans a $1,250,000 apartment colony at *St. Johns, N. B.* . . . The Pennsylvania Department of Property and Supplies and the State Navigation Commission will build a $1,800,000 navigation school at *Morrisville, Pa.*

Highways—*Louisiana* announced it would call for bids on $31,000,000 in highway work in the early spring. . . . *New York* will replace two old bridges over the state barge canal at Rochester. . . . *Oregon* rejected as too high all bids on ten of 18 road projects recently, planned to call new bids within four or five months. . . . Officials of *Ohio, Michigan, Indiana* and *Pennsylvania* said that unless they could find new revenue sources, they would oppose construction of superhighways across their states at present, in favor of improving existing roads. . . . *Milwaukee County, Wis.*, planned a $2,000,000 three-year highway program.

Sewerage—*Lake City* and *Monette, Ark.*, began preliminary engineering for modern sewage disposal systems. . . . *Pontiac, Mich.*, increased its sewerage rates by 50 percent. . . . *Alleghany County, Pa.*, commissioners passed a resolution to create an independent authority to operate a county-owned $50,000,000 sewage disposal system. The authority will be composed of a 5-man board of commissioners, to be paid $8,000 annually each.

Water Supply—The U. S. Bureau of Reclamation said it had placed survey parties in the field to study the proposed dam site for the Sly Park Reservoir, near *Placerville, Calif.* . . . While builders in its suburbs waited a decision, *Cincinnatti, Ohio*, city councilmen debated a bill that would prohibit outlying communities from tapping city mains for water.

Miscellany—*Florida* said its state construction program would cost $21,000,000. . . . *Springfield, Ill.*, planned an $800,000 expenditure on its schools. . . . Army engineers at *Philadelphia, Pa.*, placed on sale the barge "Seapower"—a floating electric power plant. . . . *Pennsylvania* announced it would spend $11,000,000 on stream reclamation and reforestation in the next few years.

Calendar of Meetings

NATIONAL

American Road Builders' Association, 1946 annual meeting and convention, Stevens Hotel, Chicago, Ill., Jan. 14-17.

American Society of Civil Engineers, annual meeting, Commodore Hotel, New York, N. Y., Jan. 16-18.

Highway Research Board, Oklahoma City, Okla., Jan. 25-28.

Associated Equipment Distributors, 27th annual meeting, Edgewater Beach Hotel, Jan. 28-31.

American Association of State Highway Officials, Oklahoma City, Okla., Jan. 29-Feb. 1.

REGIONAL

Illinois Contractors Association, Springfield, Ill., Jan. 7-8.

Kansas Contractors Association, Kansas City, Mo., Jan. 10-11.

American Water Works Association, New York Section, Hotel Pennsylvania, N. Y., Jan. 15.

Associated General Contractors of America, Inc., Kansas City Chapter, Kansas City, Mo., Jan. 16.

New York State Sewage Works Association, annual meeting, Hotel Pennsylvania, New York, Jan. 18.

Gen. Somervell retires, succeeded by Gen. Lutes

General Brehon B. Somervell retired Jan. 1, 1946 from the post of Chief of the Army Service Forces, and the War Department announced that Lt. Gen. Leroy Lutes succeeded Gen. Somervell in the post.

Gen. Somervell had announced previously (*ENR*, Sept. 27, 1945, vol. p 411) that he would submit his own request for retirement shortly after that of Gen. George C. Marshall, former Army Chief of Staff.

Gen. Lutes, an artillery officer, entered the regular Army in 1917 from the National Guard. In 1942, he was assigned to England to prepare supply support to U. S. forces based there. He returned to Washington in 1945 to become Chief of Staff and Deputy Commander, A.S.F., under Somervell.

General Somervell, who became Chief of the Service of Supply (later Army Service Forces) in March 1942, after a long career in the Corps of Engineers, has made no immediate announcement of his plans after retirement.

George E. Spargo named deputy mayor, N. Y. City

The first appointment made by Mayor William O'Dwyer of New York City (who assumed office Jan. 1, succeeding Fiorello H. LaGuardia) was that of George E. Spargo as Deputy Mayor for a period of six months.

Mr. Spargo is a civil engineer who has been chief aid of Park Commissioner Robert Moses and general manager of both the N. Y. City Tunnel Authority and the Triborough Bridge Authority. He entered the city's service as an assistant engineer in 1928 after having been graduated with honors in 1926 from the Rhode Island State College. He later became executive officer of the Department of Parks.

As Deputy Mayor, Mr. Spargo may sit in the Board of Estimate and cast the three votes of the Mayor, and he may also represent the Mayor before the council. Mayor O'Dwyer said that he had named Mr. Spargo to this post "because of his knowledge of city government and because of his close association during the last 18 years with the various city departments."

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Col. John R. Hardin gets Mississippi River post

Col. John R. Hardin, deputy chief engineer in the ETO from April, 1943, through the war, has reported for duty at Vicksburg, Miss., where he has been assigned as deputy to Robert W. Crawford, president, Mississippi River Commission and division engineer, Lower Mississippi Valley Division.

Colonel Hardin was graduated from the U. S. Military Academy in 1918 and from Massachusetts Institute of Technology in 1921, where he received a B.S. of C.E. degree. His assignments between wars included three years with the Third Engineers in Hawaii; four years at the Engineer School; four years as professor of military science and tactics at the Missouri School of Mines; and four years as assistant in charge of construction of the spillway and main control gates at Fort Peck Dam in Montana.

After graduation from the Command and General Staff School in 1939, Col. Hardin was assigned as Chief of the Construction Branch in the office of the Chief of Engineers, U. S. Army. The following year he was placed in charge of the $2 billion construction program of the Army Air Forces which later included construction of air bases in the Atlantic, Alaska and South America.

In January, 1942, when the Chief of Engineers became responsible for all Army construction, Col. Hardin became executive officer for the Construction Division, which built some $9 billion of military installations.

As deputy chief engineer in the European Theater, Col. Hardin had a large part in the construction program in the United Kingdom for providing the air bases, cantonments and other facilities for the development of our troops against the Continent; as well as advance planning for construction operations on the continent and providing the huge quantities of equipment and materials needed.

Call bids for dam on Canada's Campbell River

Marking a definite start on the Campbell River power development program of the British Columbia Power Commission, bids were asked recently by the British Columbia government for erection of an 85-ft. dam at Campbell River, together with water conduits and a powerhouse.

Specifications are available from the Power Commission offices at Victoria, B. C., or the Vancouver Building and Construction Industries Exchange.

State drops Denver pollution charge

In a surprise reversal of earlier action, the State of Colorado last week instructed its attorney general to drop action on charges that the City of Denver was emptying improperly treated sewage into the South Platte River, causing dangerous pollution.

The action had been requested several weeks ago (*ENR* Nov. 22, 1945, vol. p. 690) by Dr. R. L. Cleere, executive secretary of the state board of health, who said studies of the river water indicated that Denver's treatment of its sewage was not adequate. Basing his order on reports submitted by Ben V. Howe, sanitary engineer for the board since 1930 and recently resigned, Dr. Cleere ordered Denver officials "to do something about" the polluted condition of the stream.

Dr. Cleere said his action in asking that charges be dropped was dictated by the discovery that earlier pollution reports were based on studies that did not include surveys of effluent discharged into the stream by industrial plants outside of the city limits. He added that new studies will be undertaken by the board, but said that such studies would require an additional two months of work or more. Until these studies have been completed, no further action is planned against the city.

In a statement accompanying the original charges, the board of health said that Denver's treatment plant, which began operation in 1937, had utilized chemical treatment facilities for only about a week after starting operations. The city, in a statement by Mayor Stapleton, countered the charge with the statement that it believed that the municipality was abiding by all state health requirements.

The state's action brought to an end a long controversy between state and city authorities over the Denver sewage treatment procedures.

WLB calls Houston wages "runaway"

Houston, Tex., construction workers and contractors last week were warned to "take stock and clean up" a "runaway" labor wage situation or face War Labor Board action, as strikes threatened to halt the city's construction program.

Thad Scott, regional WLB enforcement attorney, characterized the city as one of the national "hot labor spots" where a giant postwar construction program and an acute housing shortage have combined to force up construction labor rates. At the same time, Scott announced that the WLB had penalized a Houston contractor $15,000 and a brick manufacturing firm $12,500 for allegedly violating the wage stabilization act. The penalties are to be assessed by requiring deductible operating expenses reduced by the amount of the fines by the Internal Revenue bureau.

Meanwhile, a controversy over wage increases which has occupied attention of contractors and building trades unions since Dec. 1, threatened to impede the city's $400,000,000 postwar construction program.

The unions have demanded a wage increase averaging 25 cents per hour. Contractors countered with a 12½ cent per hour offer, which was not accepted. Federal conciliators are now in the city in an attempt to arrange an agreement.

Strike ties up St. Louis

A 100 percent stoppage of all building construction in St. Louis and St. Louis County, Mo., was claimed last week, as a result of a strike of members of the AFL Hoisting Engineers' Union. The men left their jobs in local quarries, materials plants and city construction jobs more than two weeks ago in an effort to enforce a demand for wage increases that would amount to the establishment of a $20-per-day scale. The strike began Dec. 7, when engineers left their jobs over the wage demand.

Tacoma and New York grant raises

The Tacoma, Wash., chapter of the Associated General Contractors of America has signed a new wage agreement with the Tacoma Building Trades Council which provides 10 cents an hour more for construction workers.

The agreement will go into effect as soon as it has been approved by the Wage Adjustment Board in Washington, D. C., according to Roy T. Earley, president of the chapter.

Shortage of skilled construction labor is the most serious block to Illinois' roadbuilding program, members of the state's Black Top Road Association were told at a recent meeting at Springfield.

In New York, building trades workers received Wage Board Adjustment approval for increases of 15 percent. (see p. 9 for details).

Major projects provided funds under deficiency bill

A detailed list of some of the many Bureau of Reclamation and Corps of Engineers projects for which funds were provided in the First Deficiency Bill passed by Congress last week (*ENR* Dec. 27, 1945, vol. p. 849) is shown herewith. The list is based on reports issued by the two agencies.

BUREAU OF RECLAMATION

Reclamation Fund, Special Fund:	
Salaries and expenses	$500,000
General investigations	1,000,000
Projects:	
San Luis project, Colorado	1,000,000
Boise project, Idaho, Payette Div.	2,000,000
Boise project, Idaho, Anderson Ranch	1,925,000
Minidoka project, Idaho	720,000
Palisades project, Idaho	1,000,000
Rio Grande project, New Mexico	750,000
Tucumcari project, New Mexico	2,000,000
Lugert-Altus project, Oklahoma	2,020,000
Deschutes project, Oregon	1,000,000
Klamath project, Oregon-California	1,000,000
Owyhee project, Oregon	190,000
Provo River project, Utah	860,000
Yakima project, Washington, Roza Div.	1,650,000
Kendrick project, Wyoming	500,000
Riverton project, Wyoming	1,000,000
Shoshone project, Wyoming	
Heart Mt. Division	1,000,000
Power Division	1,124,000
General Fund, Construction:	
Gila project, Arizona	2,000,000
Davis Dam project, Arizona	5,900,000
Central Valley project, California	19,215,000
Colorado-Big Thompson project, Colo.	5,750,000
Hungry Horse project, Montana	1,500,000
Columbia Basin project, Washington	10,275,000
Colorado River Dam Fund:	
All-American Canal	3,000,000
Colorado River Development Fund	1,000,000
Fort Peck project, Montana	800,000
Missouri River Basin	10,780,300

CORPS OF ENGINEERS

New Construction on Rivers and Harbors Jobs

Great Lakes to Hudson River Waterway	$2,000,000
Delaware River, Philadelphia to the sea	743,700
Chesapeake and Delaware Canal	645,000
James River, Va.	652,000
Pearl River, Miss. and La.	1,573,500
Mississippi River between the Missouri River and Minneapolis, Minn.	3,439,500
Missouri River at Fort Peck, Mont.	1,185,000
Monongahela River, Pa. and W. Va.	2,700,000
Keweenaw Waterway, Mich.	548,000
Black Rock Channel and Tonowanda Harbor, N. Y.	967,000
Oswego Harbor, N. Y.	571,000
Los Angeles and Long Beach Harbors, Calif.	7,100,000

Maintenance of Rivers and Harbors Projects

Chesapeake and Delaware Canal	$1,200,000

Flood Control, General, Construction

Buggs Island Reservoir, Va. and N. C.	$1,000,000
Clark Hill Reservoir, Ga. and S. C.	1,000,000
Allatoona Reservoir, Ga.	3,000,000
Narrows Reservoir, Ark.	1,000,000
Bayou Bodcau Reservoir, La.	1,000,000
Shreveport, La.	500,000
Blakely Mountain Reservoir, Ark.	500,000
Memphis, Tenn.	1,000,000
Buffalo Bayou, Tex.	1,500,000
John Martin Reservoir, Colo.	500,000
Blue Mountain Reservoir, Ark.	1,000,000
Clearwater Reservoir, Mo.	1,000,000
Norfork Reservoir, Ark.	1,000,000
Bull Shoals Reservoir, Ark.	3,000,000
Fort Smith, Ark.	853,600
Little Rock, Ark.	548,400
Denison Reservoir, Tex. and Okla.	1,500,000
Canton Reservoir, Okla.	2,000,000
Fort Gibson Reservoir, Okla.	2,000,000
Fall River Reservoir, Kans.	1,000,000
Wister Reservoir, Okla.	1,000,000
Hutchinson, Kans.	500,000
Mountain Brook Reservoir, N. H.	521,500
Norwich, Conn.	632,000
Union Village Reservoir, Vt.	1,000,000
Holyoke, Mass.	500,000
Syracuse, N. Y.	500,000
East Sidney Reservoir, N. Y.	700,000
Elmira, N. Y.	1,000,000
Almond Reservoir, N. Y.	1,000,000
Sunbury, Pa.	500,000
Williamsport, Pa.	1,000,000
Kansas Citys, Mo. and Kans.	2,000,000
Kanopolis Reservoir, Kans.	1,000,000
Garrison Reservoir, N. Dak.	2,000,000
Council Bluffs, Ia.	500,000
Omaha, Nebraska	500,000
Missouri River between Kenslers Bend, Nebr., and Sioux City, Iowa	500,000
Cottonwood Springs Reservoir, S. Dak.	510,000
Wolf Creek Reservoir, Ky.	4,000,000
Dale Hollow Reservoir, Tenn. and Ky.	1,500,000
Center Hill Reservoir, Tenn.	3,000,000
Mounds and Mound City, Ill.	500,000
Newport, Ky.	500,000
Delaware Reservoir, Ohio	1,000,000
Muskingum River Reservoirs, Ohio	1,500,000
Bluestone Reservoir, W. Va.	3,000,000
Massillon, Ohio	500,000
Parkersburg, W. Va.	500,000
Hulah Reservoir, Oklahoma	1,000,000
Dewey Reservoir, Ky.	1,000,000
Dillon Reservoir, Ohio	1,000,000
Youghiogheny River Reservoir, Pa.	573,000
Conemaugh River Reservoir, Pa.	3,000,000
Punxsutawney, Pa.	500,000
Elkins, W. Va.	500,000
Coal Creek Drainage and Levee Dist., Ill.	500,000
Lancaster, N. Y.	570,400
Mount Morris Reservoir, N. Y.	500,000
Santa Fe Reservoir, Calif.	900,500
Los Angeles River, Calif.	2,000,000
Detroit Reservoir, Oreg.	2,000,000
Dorena Reservoir, Oreg.	1,000,000
Tacoma, Wash.	700,000
Preparation of plans for flood control	2,800,000
Flood control, Mississippi River and tributaries	15,000,000

As approved by the House and Senate, the deficiency bill contained more than $618,000,000 for construction and planning, and is expected to act as a spur for construction programs running into several billion dollars.

Not included in the above listing are many hospital projects approved for the Veterans Administration. These include: A 1,600-bed neuropsychiatric hospital at Lebanon, Pa., to cost $9,147,000; $10,500,000 general medical and surgical hospitals, with 1,000 beds each, at Albany and Buffalo, N. Y., and Newark, N. J., and a $4,000,000, 500-bed general hospital at New Haven, Conn.

Other veterans' work approved, under the heading of additions to existing hospitals, includes: addition of 164 beds to the hospital at Downey, Ill., $2,085,000; additions of 150 beds at the hospitals at Minneapolis, Minn., and Sioux Falls, S. D., at costs of $1,715,000 and $947,000 respectively; additions of 150 beds in tuberculosis hospitals at San Fernando, Cal., and Portland, Ore., at a cost of $1,581,000 and $1,372,000, and addition of 164 beds, at a cost of $1,125,000 at Roseburg, Ore.

British build poured-concrete homes to speed solution of housing shortage

Use of special forms eliminates need for much skilled labor and speeds time for the erection of two-family units

In contrast to experiments with prefabricated and other types of houses built by novel methods and using materials not yet proven, some British engineers have sought new methods of constructing permanent housing using existing materials but requiring a minimum of skilled labor.

One result of such efforts are the "Wimpey" houses, shown in the accompanying photograph, developed by George Wimpey, British engineer.

These two-family structures contain side, back and party walls 12 in. thick, built of a special cellular concrete which is said to be damp-proof and warm. This concrete is placed in special forms that can be removed readily and re-used many times over. The formwork, made to exact specifications, fixes the position of windows, door openings and other openings that are required in the external walls, and in addition marks the precise position of all openings for pipes and other fittings.

Units placed easily

By using cranes to handle the formwork, units as large as the complete side of the house can be placed in position in one operation, and concrete poured quickly in 8 ft. lifts.

Use of formwork on a large scale is made possible by leaving the front of the house open in the initial stages, to allow the units to be withdrawn. As soon as concreting is completed, the roof can be placed, allowing further work to be done under cover, but with the open front giving easy access for workmen and materials.

After forms have been removed and most of the interior work has been completed, the brick front wall is erected, permitting the achievement of some individuality in the overall appearance of the housing developments. Because of the considerable area of the front windows and door openings, only 13 percent of the exterior wall above the ground is in the front wall. Thus, nearly all skilled bricklaying is eliminated.

The house is finished off with a normal tiled roof.

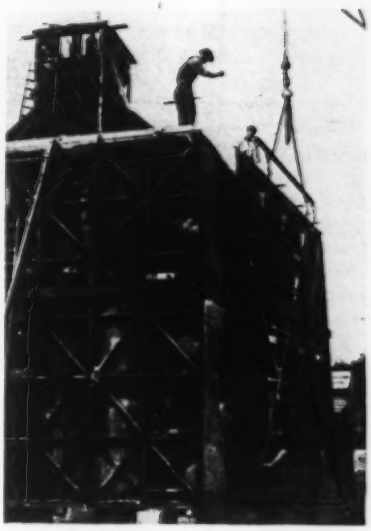
Overall size of the house has been kept to "reasonable proportions," said to bring the cost within the reach of average incomes.

Although prefabricated materials for external walls and roof are not used, builders have adopted factory methods for making the internal fittings, and arranged for all roof timbers and floor joists to be cut to size before being sent to the site.

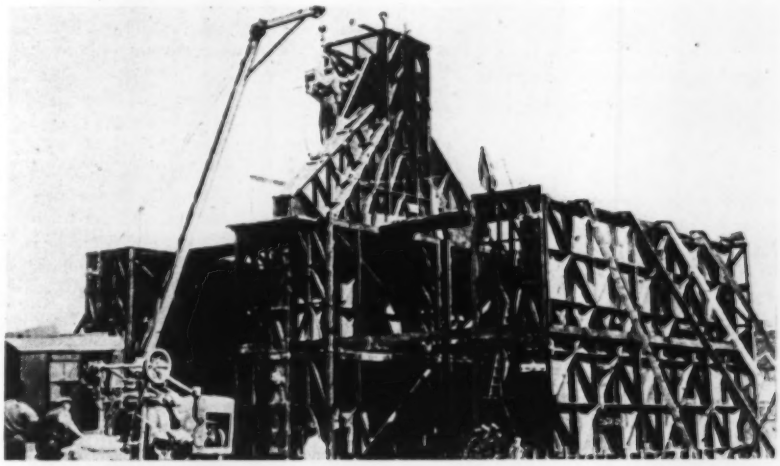
Interior arrangements

Interior arrangements include sliding doors between the kitchen and living room, permitting use of the two rooms as a single unit if desired, and incorporation of modern kitchen and heating appliances in the home.

Plans for interiors were submitted to a board of architects and approved by housewives before being put in final form.



Above: Crane lifts 8-ft. section of forms into place, preparatory to pouring concrete for new type British home.



Above: In order to permit large-scale concrete pouring operations and removal of the forms for re-use elsewhere, the back, side and party walls are poured as units, the front of the house being bricked up after concreting is finished.

Photos by British Combine

Above: At left is another view of the "Wimpey" house under construction, with a completed model at right.

MEN AND JOBS

Elwood T. Nettleton, engineering associate with C. W. Blakeslee & Sons, Inc., New Haven, Conn., has been appointed engineer of contracts for the state highway department. He was graduated from Sheffield Scientific School in 1921, and has served as engineer with private firms and the state highway department of Pennsylvania.

Robert Hahn and **E. C. Brackney** will supervise the engineering department of the Jones-Hettlesater Construction Co., Kansas City, Mo., with Mr. Hahn in charge of the structural engineering division and Mr. Brackney as head of the mechanical engineering department. Both have been with the firm several years.

James Price, Quebec, Que., has been named town engineer of Bridgewater, N. S., Can.

M. H. Lander, civil engineer, has opened an engineering office at Wilmington, N. C.

George G. Powell, deputy city engineer, has been appointed commissioner of works and city engineer for Toronto, Ont., succeeding the late R. C. Harris. Mr. Powell was graduated in civil engineering from the University of Toronto in 1903. He was employed some time by the Toronto Niagara Power Co. at Niagara Falls.

Charles F. Bradbury, surveyor for Jefferson County, Louisville, Ky., will be made county road engineer. He was appointed assistant road engineer several months ago. **E. Allen Gailbreath,** now road engineer, is expected to become the assistant.

Capt. H. L. Roahrig has recently been transferred from county sanitary engineer, with the county health unit, Wheaton, Ill., to serve with the U. S. Public Health Service District 3, Chicago, with responsibility for completing 116 surveys to be made in Illinois. Of the 60 which he will conduct personally, he has already finished 45. Assisting him is **Capt. M. A. Getz.**

At Jacksonville, Ill., **C. H. Harney** has been advanced from acting to full Morgan County superintendent of highways.

Col. C. Jack Bermingham has been appointed assistant general manager of the Brennan Paving Co. Ltd., of Hamilton, Ont. After studying engineering at the Royal Military College, Kingston, he was a partner for 18 years with his father in the firm of William Bermingham and Son, general and marine contractors of Kingston.

Marshall Young is new field office superintendent for the Colusa, Calif., office of the Bureau of Reclamation, Region 2. Transferred from the Friant Division, in cooperation with the California State Division of Water Resources, he will supervise crews that are measuring diversion of water from the Sacramento River.

Maj. Alfred Benesch, with the railroad crossings branch of the Illinois Division of Highways before entering the Army, has returned to Springfield from Japan and is now on sick leave from the hospital in Galesburg.

Col. Thomas E. Wood, who has returned from 14 months service in the China-Burma-India theater, has been appointed commanding officer for the Lake City Ordnance plant, near Kansas City, Mo. This plant is operated by the Engineers unit of the Seventh Service Command. Colonel Wood, a grad-

Army district engineer office changes

Col. George W. Gillette, recently assigned to the Chief of Engineers Office in Washington, D. C., has been reassigned to the U. S. District Engineers Office at Wilmington, N. C., where he served as district engineer from 1938 to 1942. He succeeds **Col. C. E. Haring,** who has served as district engineer since 1943, and whose next assignment with the Corps has not been announced. A native of Onslow County, N. C., and a graduate of North Carolina State College and the Army's Engineering School, Col. Gillette, in addition to his work with the Chief Engineers Office in Washington, has served at Fort Belvoir, Va., and Fort Lewis, Wash., since leaving Wilmington in 1942. He served overseas with the Sixth Engineer Regiment of the Third Division in World War I.

Richard W. Williams has been appointed supply officer for the Portland, Ore., district Army Engineers, succeeding **Lt. Col. John Herbert Brown,** who is being released from active duty. Williams will continue also as the district's contracting officer.

An assignment to temporary duty outside the continental limits of the United States has been received by **Maj. Donald E. Eppert,** who for the last five years has been associated with the Jacksonville, Fla. U. S. Engineer District. Serving under Col. A. B. Jones, the district engineer, Eppert supervised all military construction, military supply and civil works along the east coast of Florida from Melbourne to Key West from October, 1943, to March, 1944.

Col. George J. Zimmerman has been assigned as Portland, Ore., district U. S. Army engineer, succeeding **Col. Ralph A. Tudor,** who is returning to civilian life and will join Morris-Knudsen Co. Colonel Zimmerman has been on the staff of Lt. Gen. R. C. Richardson, Jr., commanding officer of the Pacific ocean areas, Honolulu. He is a graduate from the University of Cincinnati in 1926 and from the Army Engineers' school at Fort Belvoir, Va., in 1929.

Lt. Col. F. O. Reeves has been assigned as executive officer of the U. S. Engineer's Office, Little Rock, Ark., according to Col. Roy D. Burdick, District Engineer. Col. Reeves replaces **Maj. Charles G. Sonnen,** recently released from active duty.

Other recent changes in the Little Rock Engineers Office include the assignment of **Capt. W. R. Clark** as head of the Engineering Reports Branch, Engineering Division, replacing Col. Reeves; the release from active duty of **Capt. George H. Robinson** as assistant chief, Operations Division; the release of **Capt. Joe C. Stine,** as head of the redistribution center; and the assignment of **Capt. L. M. White** as acting chief, Operations Division, replacing **Maj. H. E. Murray,** released from active duty.

E. P. Neman has been assigned as acting head of the investigation branch, Engineering Division, replacing **Capt. I. I. Lohn,** released from active duty.

For "signal achievement" as Memphis, Tenn., district engineer, **Col. Garner W. Miller,** Corps of Engineers, has been awarded the Legion of Merit. Announcement of the award was made by Maj. Gen. Robert W. Crawford, division engineer and president-designate of the Mississippi River Commission. Recommendation for the award was made by Brig. Gen. Max C. Tyler, who is retiring as president of the River Commission.

Maj. Gen. William M. Hoge has been appointed U. S. Army Division Engineer for New England with headquarters at Boston, Mass. General Hoge served in the regular army and commanded the troops which captured the Remagen Bridge across the Rhine River.

uate of West Point, succeeded **Col. J. S. Hudgens,** who after Feb. 1, next, will retire from active service.

William Muirhead, president of the Muirhead Construction Co., Durham, N. C., and a past president of the Associated General Contractors of America, has resumed work with the firm after returning from Europe where he was on a special mission for the government. During his absence **H. S. Crain,** vice president, was in charge of the company.

George N. Wallace has been appointed executive director of the Montgomery County, Ohio, Planning Commission. Since 1941 Mr. Wallace has been employed as site-planner on numerous airfield projects for the government. In his new position he will have charge of extensive studies being made in the Dayton area on interregional highways, traffic, land utilization, parks and playgrounds and assist in the preparation of the city's 10-year postwar capital improvement program.

Comdr. Charles M. Noble, deputy director of the advance base department, Bureau of Yards and Docks, Washington, D. C., has been awarded the bronze star for service in the Far East in enemy-dominated territory in 1944. Comdr. Noble was also the recipient of the Legion of Merit in connection with work as officer in charge of the 22nd Seabee Battalion and the 6th Seabee Regiment, which constructed naval bases and airfields in Alaska and the Aleutians. Before entering the Navy, Comdr. Noble was employed with the Port of New York Authority for 13 years, working on its bridge and tunnel program. He was also chief highway engineer on the Pentagon building road system.

Kenneth Dibble, resident engineer at Boise, Idaho, for the Corps of Engineers, has been transferred to the Portland, Ore., district office and is succeeded at Boise by **Vern A. Glascock** of Walla Walla, Wash.

The city council has selected **Alexander M. McKinnon,** Sacramento, city engineer of Davis, Calif., a position recently made vacant by the resignation of **A. D. Coons.**

A. A. Kalinske, associate professor of hydraulics and associate director of the Iowa Institute of Hydraulic Research at the University of Iowa, Iowa City, has resigned to join the engineering staff of the Cleaver-Brooks Co. of Milwaukee, Wis.

Earl H. Lund, assistant chief office engineer of the Public Buildings Administration, Federal Works Agency, in Washington, D. C., will become division engineer in San Francisco, effective March 1, 1946, to succeed **J. E. Stanton,** who will go to Washington at that time as deputy commissioner for design and construction, Public Buildings Administration.

Myron George, who has been acting as secretary of the Kansas State Highway Commission, and who for some months has been acting director, has been appointed the new supervisor of the Kansas secondary highway system.

Edward L. Cousins has resigned as administrator of Canadian Atlantic ports, and is returning to his post of general manager of the Toronto Harbor Commission. He is a graduate civil engineer of the University of Toronto and formerly served the harbor of Toronto also as chief engineer and consulting engineer.

Capt. Joseph A. Baker of Arlington, S. D., and **Lieut. Charles J. Nelson** of Chicago, Ill., have been assigned to the Post Engineer's office at Camp Butner, N. C. Captain Baker served 29½ months in Europe with the 34th Infantry Division, and before reporting to Camp Butner was on temporary duty at the Command and General Staff School at Leavenworth, Kan. Lieutenant Nelson had been with the post engineer's office at the Charleston, S. C., Port of Embarkation.

Capt. Richard de Charms, Jr. C.E.C., U.S.N.R. has been transferred from New York City to Washington, D. C. He was civil works engineer and officer in charge of civil works contracts in the New York area. In Washington he is connected with the materials division of the Office of the Assistant Secretary of the Navy.

Back to civilian activity

S/Sergt. Kerker Bryant has returned to his former position in the engineering department of the water department, Denver, Colo., after nearly four years in the armed forces.

Lt. C. R. Rixford has returned to his former position as engineering aid specialist with the Colorado Water Conservation Board at Denver after service in the Army Air Corps.

Lieut. Col. H. P. Grout who served as executive of the Engineer Section H. Q. XVIII Corp. (Air-Borne) during the invasion of Holland, the Battle of the Bulge, and other campaigns, has returned to his former position as assistant engineer with the Colorado Water Conservation Board at Denver.

Lt. Commdr. Ralph Beerbower and **Lt. James E. Brissenden** have returned to a civilian status and have rejoined the W. L. Johnson Construction Co., Hicksville, Ohio.

Thomas R. Jacobi, formerly of Dayton, Ohio, has been named city track elevation engineer, Indianapolis, Ind., to succeed Arthur N. Henry. Mr. Jacobi has recently been serving in the Civil Engineering Corps of the Navy as a lieutenant-commander.

Frank Randall, recently discharged as a Navy lieutenant, has become service director and city engineer at Wadsworth, Ohio.

Maj. Adrian C. Taylor, formerly of the Army Engineers, has been appointed city engineer at Bismark, N. D., to succeed **Lt. Col. L. H. Belk,** who resigned recently to enter private construction work. Major Taylor was employed in the North Dakota state highway department from 1931 to 1933.

A. P. Rosche has returned from Navy service in the Pacific and is Montgomery County superintendent of highways and consulting engineer with Hurst-Rosche in Hillsboro, Ill.

Jefferson County Highway Engineer D. A. Helmich has returned to his duties at Birmingham, Ala., after serving as a lieutenant with the Seabees in the Pacific area.

Gerald L. Baker, recently in the Navy, superintendent of construction at the U. S. Veterans Administration Hospital at Oteen, N. C., has been appointed utility officer there.

Austin Brockenbrough, Jr., formerly a captain in the Navy Civil Engineering Corps has been appointed director of the department of public utilities, Richmond, Va.

Holland rushes work to reclaim farmland

Dikes breached by armies during war are being repaired to get flooded lands into agricultural production

Seeking to reclaim the more than 1,000,000 acres of farmland inundated by opposing armies during the late war, Hollanders are working on a 24-hour-per-day schedule to repair the breaches in their system of sea-dikes.

"Polders"—land reclaimed from the sea and used for agriculture—forming almost one-sixth of the area of the Netherlands, were flooded, first by the Germans as a defense against invasion, and later by Allied forces to inundate German defenses built in the flooded areas.

Probably hardest hit was the island of Walcheren in the southern provinces of Zeeland, scene of some of the desperate fighting for the port of Antwerp. Four large breaches were blown in the sea dike at Walcheren—the largest being more than half a mile in length.

Hand labor used

Forced to use hand labor for the most part, Dutch engineers were hampered by sea storms and bad weather. Dikes such as the ones to be reconstructed must be able to withstand terrific pressures and high water levels.

Invasion barges and landing craft were towed into the breaks, anchored in place and filled with rocks, then sunk.

Where possible, huge mattresses of willow limbs, the traditional dike-base, woven by skilled craftsman, were sunk to form the base for the clay dikes. These mats were then covered with a particular type of gray blue clay found in the area and used almost exclusively for this sort of work. The clay is said to be both water-free and water resistant.

On the land side of the main body of the dike, a core of sand was pumped to protect the inner side of the dike from water that must later be pumped away, and as further stiffening for the dike wall. Flanks of the dike facing the sea are covered with large stones and sandbags, stoked into position. The final cover of the dike is also made of willow limbs.

Another problem faced by the Dutch farmers, once their land is reclaimed, is that the salt water has soaked impurities into the soil that will make it difficult to cultivate. Plans for elimination of the salt call for construction of a series of canals through the reclaimed area. It is believed that as rain falls the surface will be washed and the salt layer will flow into the drainage canals, eventually returning to the sea.

Photos from Black Star

Three steps in the reconstruction of Holland's system of dikes are shown from top to bottom above. Base is a huge, willow-mat, woven around upright stakes. Then layers of blue clay are applied by hand, and rubble and sandbags placed on top as final course. Emergency measures also included use of abandoned invasion barges, boats, etc., to fill wide gaps.

Terminal Island bridge re-instated by Navy

Reinstatement by the Navy Department of a $14,000,000 bridge and freeway project to replace a temporary wooden swing-span bridge connecting Terminal Island in Los Angeles-Long Beach harbor with Willow St., Long Beach, was announced Dec. 17 by Secretary of the Navy James V. Forrestal.

The project, including a $10,000,000 bridge and approaches estimated to cost another $4,000,000 was withdrawn Nov. 26 when Secretary Forrestal disapproved peacetime expenditures of war-voted funds. His action came when award of a contract for first units of the bridge and freeway was sought after bids were opened. The low bidder for the initial construction was the United Concrete Pipe Co., Los Angeles, with an offer of $5,319,000 with a $20,000 deductible alternate. (*ENR* Dec. 6, vol. p. 757).

The Navy announcement, which fixed the initial contract price at $5,299,000, indicating elimination of the $20,000 alternate, gave no date for start, but a representative of the successful bidder placed it at around Feb. 1, next.

Reinstatement of the project followed a conference in Washington, at which County Supervisor Ray Darby and President W. R. Martin of the Long Beach Harbor Commission requested the action. They claimed that work on the project had been under way for several years, that the project was not a war emergency need, and that rights-of-way valued at $3,000,000 would be lost if it were abandoned.

State wins sewer suit against Calif. cities

A suit by the State of California against Los Angeles and nine other cities and districts, filed early last year, (*ENR* Aug. 9, 1945, vol. p. 147) and being heard since Nov. 26, by Superior Judge Joseph W. Vickers, ended Dec. 20 in a decision upholding the state's contention and placing on the defendants blame for unsanitary shore conditions cited in the suit. The court ordered the conditions corrected as expeditiously as possible, recommending chlorination equipment as a temporary abatement until a permanent solution can be achieved. Construction of a high rate, activated sludge disposal plant has been recommended by the engineering firm of Metcalf and Eddy, and part of the $21,000,000 for it and necessary sewers has been voted by Los Angeles, Santa Monica, South Pasadena and El Segundo. The court suggested that the other defendant districts cooperate.

Although the court did not set deadlines for completion of either temporary or permanent correction, it was pointed out that the state could probably obtain damages from the cities involved if there is delay.

To open bids for outfall sewer

Bids will be opened Jan. 9, 1946, for construction of a submarine outfall sewer main, first unit of the proposed modernization of Los Angeles' sewage disposal facilities at Hyperion, on the ocean shore. The $2,000,000 outfall sewer is part of the $21,000,000 program, which will include construction of a high rate activated sludge type sewage treatment plant to serve the city and surrounding suburbs.

The outfall sewer plans call for one 12-ft. or three small diameter pipes of equal capacity, of either concrete or iron, to extend out along the ocean floor for 5,200 ft. Construction will be ordered to start immediately after award of the contract, with 15 months allowed for completion.

Pittsburgh Meter Co. adopts new name

Stockholders have approved the recommendations of the Board of Directors that the name of the Pittsburgh Equitable Meter Co. be changed to the Rockwell Manufacturing Co., and that stock be split, four shares for one. At the same time, stockholders continued the directors of the Pittsburgh Equitable Meter Co. as directors of the Rockwell Manufacturing Co. Col. Willard F. Rockwell, for whom the company is named, is chairman of the board and president.

W. F. Rockwell

The Pittsburgh Equitable Meter Co. name will be continued as the subsidiary of the Rockwell Manufacturing Co., building measuring equipment for water, gasoline, oil and other liquids, in plants located in Pittsburgh, Brooklyn and Hopewell, N. J.

Canada drops controls

Following hard on the abolition of construction controls in Canada (*ENR* Dec. 20, vol. p. 840), the last remaining steel control orders have been revoked and the office of the Steel Controller has been closed, according to an announcement of Munitions Minister C. D. Howe.

Approve 15 percent raise for N. Y. construction men

The Wage Adjustment Board at Washington last week approved wage increases approximating 15 percent for New York City construction and building trades workers.

In the higher brackets, the approved wage schedules were slightly below those requested recently by the Building Trades Association of New York and the construction trades council of greater New York (*ENR* Oct. 4, vol. p. 417).

The labor organizations, with concurence of contractor groups, had asked a full 15 percent raise for all employees up to a maximum of 25 cents per hour.

A week's vacation with pay and compensation for six holidays a year, not worked, were not allowed. The change in rates, effective Jan. 1, is the first general increase since 1929 and is within the "Little Steel" formula. The following adjustments were approved for the heavy and highway construction fields:

Laborers, from $1.10-$1.20 to $1.20; puddlers and rakers, from $1.05 to $1.25; form setters, from $1.65 to $1.75; timbermen, from $1.37½ to $1.60; carpenters' helpers, from $1.10 to $1.20; blasters, from $2 to $2.12½; wagon drill runners, from $1.50, to $1.60; drill runners from $1.37½ to $1.45. An hourly rate of $2.10 as against a former rate of $1.85 was approved for members of locals affiliated with the New York District Council of Carpenters.

Garrison Dam fund in deficiency bill

The Deficiency Bill as sent to President Truman for approval now includes an appropriation of $2,000,000 for the start of work on the Garrison Dam on the Missouri River. As originally reported (*ENR* Dec. 27, 1945, vol. p. 850) it was said that this item had been stricken from the bill because the Senate and House could not agree.

Garrison Dam will replace an off-river reservoir just west of the Montana line originally proposed by the Bureau of Reclamation to be fed by diversion from Fort Peck Dam and to be part of a long canal and pumping system to replenish Devils Lake and eventually augment the flow of the James River in the eastern Dakotas for additional irrigation. Devils Lake and the James will now be supplied by a diversion canal from Garrison reservoir to the Sheyenne reservoir on the Sheyenne River, with a lateral canal to the lake, and by another diversion canal back into the Missouri basin, feeding the Jamestown reservoir.

ENGINEERING SCHOOL NEWS

Engineer shortage "viewed with alarm" by Dean Sumwalt—Faculty additions at California Institute of Technology

The shortage of engineers has become the chief concern of Dean R. L. Sumwalt of the school of engineering, University of South Carolina. He views this problem as "a serious postwar threat to the nation." After considerable research, Dean Sumwalt concludes that "from the viewpoint of the young man planning a career, few fields offer such abundant opportunities.

"From the point of view of the nation and its needs, the immediate training of thousands of engineers has become a critical problem because the engineer shortage places in jeopardy the vast program of technological advancement which has been projected for the postwar period," he said.

Other surveys indicate that the training of engineers has become one of the chief tasks of the reconversion period. New production plans and the creation of jobs depend largely on prior work by scientists and engineers. "In solving this problem, we must look to the returning veteran," the dean said. "He has been rightly called our No. 1 resource."

The school of engineering at South Carolina is now considering the possibility of offering some short courses if there is a sufficient demand for them. There has been a tendency toward making college entrance requirements more flexible without lowering them.

Two fellowships have been established at the engineering experiment station of the University of Colorado by the Ideal Cement Co. of Denver. They honor Charles Boettcher, pioneer Colorado industrialist and president and founder of the Ideal Cement firm, and will be used for applied research on concrete.

The first studies will be on the strength and composition of concrete made with aggregates available in the Denver area. The object of the work is to find the best mixes for concrete construction using Denver aggregates. Similar studies are planned on the aggregates available in other parts of Colorado. These studies are among the more than 20 industrial research projects now being conducted by the station.

Midwest Iron and Steel Works Co., Denver, also has made a donation for research studies in civil engineering at the university. Prof. Warren Raeder, head of the department, says that the money probably will be used in investigating engineering problems which arise in the fabrication of steel buildings and other structures.

A. P. Banta and G. W. Housner have recently been appointed associate professor of sanitary engineering, and assistant professor of applied mechanics, respectively, at the California Institute of Technology.

Professor Banta was graduated with the degree of C.E. from Stanford University in 1926, and received his M.S. from the California Institute of Technology in 1928. Later he was assistant engineer in the Los Angeles County Sanitation District. In 1939 he became assistant professor of sanitary engineering at California Institute of Technology. Called to active duty as a reserve officer, he held the rank of lieutenant-colonel in the Engineers Corps in the Pacific Area. During the early years of the war he was in charge of water supply and sewerage installations in southeastern army camps.

Dr. Housner was graduated from the University of Michigan in 1933 with the degree of C.E. In 1934 he received his M.S. from California Institute of Technology and his Ph.D. in 1941. During the war Dr. Housner served as chief analyst of the First Operational Analysis Section with the 15th Air Force in England, Africa and Italy. He was formerly connected with the district engineer's office in the Los Angeles County Sanitation District.

In order to fill the needs of industrial, research and educational organizations in Georgia and the South for engineers and scientists with graduate training, the Georgia School of Technology, Atlanta, is expanding its division of graduate studies, starting with the opening of the spring term on March 4, next. In connection with this plan, the division is offering a series of graduate awards, ranging up to $1,800 per academic year, in engineering and allied sciences to qualified graduates of Georgia Tech and other colleges and universities in the United States. Dr. Robert I. Sarbacher, dean of the division of graduate studies, is in charge of the program.

In general, the awards will consist of research fellowships, graduate fellowships, research assistantships, graduate assistantships, and part-time instructorships.

JOBS OF THE WEEK

DAM and POWER PLANT, Arizona

Bureau of Reclamation, Kingman, received the lowest bid for completing Davis Dam and Power Plant on Colorado River, 34 miles west of Kingman, Davis Dam Project, from Utah Construction Co., San Francisco, Calif., at $21,462,505. The project originally was started by the same firm in 1942 under an $18,966,000 contract.

OFFICE BUILDING, Boston, Mass.

John Hancock Mutual Life Insurance Co., Boston, has awarded the contract for the construction of a 26-story office building with 355 ft. tower and two 7-story wings, to Turner Construction Co., Boston. The estimated cost is $12,000,000. Cram & Ferguson, Boston, are the architects.

DAM, Edmonton, Alta.

Western Construction & Lumber Co., Edmonton, Alta., has been awarded a contract for the East Pothole Coulee Dam and reservoir at Spring Coulee by the Alberta and Canadian governments at about $3,500,000.

ROCKFILLED BREAKWATER, Guam

Bureau of Yards & Docks, Navy Department, Arlington, Va., has awarded a contract for a rockfilled breakwater at Apra Harbor to J. H. Pomeroy & Co., Inc., San Francisco, Calif., at $8,320,000.

ROADS, California

State Division Highways, Sacramento, has awarded a contract for grading and paving a road in Solan Co. to Fredericksen Brothers Construction Co., Emeryville, at $1,055,012. G. T. McCoy, Sacramento, is the state highway engineer.

BETATRON AND PHYSICS RESEARCH BUILDING, Urbana, Ill.

King & Petry, Champaign, Ill., have been awarded a contract for betatron and physics research laboratory by the University of Illinois, Springfield at $1,500,000. H. L. Stouffer, Champaign, is the university architect.

Note—Additional bidding and contract news on many projects large and small, including the above items, appear in the Construction News section beginning on page 12.

OBITUARY

George William Dow, 59, president and treasurer of the Norwood Engineering Co. and the Norwood Filtration Co., died in Brookline, Mass., Dec. 9. Born in Nova Scotia, Mr. Norwood was graduated from New York University in 1913. He had been associated with the Norwood Engineering Co. for 25 years.

Frank Edwin Norton, 76, a contractor well known in New England in connection with stone construction, died at Stoneham, Mass., Dec. 12.

Frederick E. Gross, Sr., 77, died Dec. 11 at Yonkers, N. Y. Mr. Gross conducted a contracting business for many years, specializing in building highways, sewers and public works.

Chauncey March Goodrich, 71, for many years chief engineer of the Canadian Bridge Co. Limited, of Windsor, Ont., died in Detroit, Mich., on Dec. 9. A native of Burlington, Vt., Mr. Goodrich was graduated from the University of Vermont and from Harvard University. He served with the Canadian Bridge Co. from 1901 on, and was consulting engineer to the company at the time of his death.

David B. Gray, 45, civil engineer, died Dec. 10 in Dunellen, N. J. He was employed by the Plainfield Weldon Construction Co. of Westfield, N. J., and the Brewster Construction Co. of Pittsburgh, Pa.

Franklin D. Rust, 42, civil engineer with the Kansas City Southern Railway Co., died Dec. 14. He was a graduate of the University of Missouri.

Ralph C. Miller, 67, comptroller of the Pennsylvania Railroad and former assistant chief engineer of the entire system died on Dec. 11. Mr. Miller entered the employ of the railroad as an assistant engineer immediately after his graduation from Ohio State University in 1901. He was stationed in Ohio, Indiana and Illinois before going to Philadelphia about six years ago. He was transferred there as assistant chief engineer of the system and in May, 1943, was promoted to comptroller.

Guy E. Cooper, 47, instructor in the industrial engineering department of Ohio State University, Columbus, and also with the testing laboratory of the Ohio highway department, on leave from both posts, died Dec. 14.

Thomas J. Madigan, Sr., superintendent of construction of the Columbus, Ohio, municipal engineering department, and for many years construction superintendent and Columbus manager of the Cleveland-Trinidad Paving Co., died Dec. 12. For a number of years he had also been with the Ohio highway department.

Harlan F. Tyne, 43, a civil engineer who had been working on the "Manhattan Project" at Oak Ridge, Tenn., died Dec. 20 at Providence Hospital, Washington, D. C. Mr. Tyne attended Holy Cross College and Rensselaer Polytechnic Institute. He became associated with his father, the late John J. Tyne, in the Tyne-Willey Construction Co., Binghamton, N. Y. Latterly he was given a traveling assignment by the War Department in connection with atomic bomb development and had headquarters in Washington.

Edward Dilworth Latta, 66, president of the Charlotte Consolidated Construction Company of Charlotte, N. C., and former superintendent of public utilities at Charlotte, died Dec. 18.

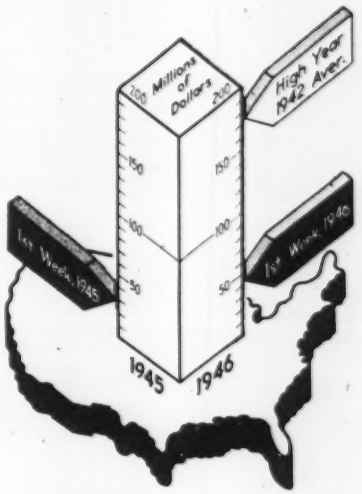
Cornelius V. Kingsland, 56, construction engineer in New York City for 37 years, died Dec. 15 in Newark, N. J.

Channing Moore Ward, 88, retired civil engineer and former superintendent of the Union Pacific Railroad, died in Richmond, Va., Dec. 18.

He had served as consulting engineer with the U. S. Geodetic Survey and later was associated with the Baltimore & Ohio and Pennsylvania Railroads, before becoming superintendent of the Union Pacific during the Harriman regime.

Rudy J. Hoff, 51, vice president and general superintendent of Johnson, Drake & Piper, Inc., N. Y. City, died Dec. 19. Mr. Hoff was from Red Wing, Minn., where he worked with his father, a pioneer contractor, prior to 1920 when he became associated with his present firm. During his 25 years with the company, he supervised many important highway projects in Minnesota, Iowa, Florida, Pennsylvania and New York. During World War II he was in charge of air base runway construction on the Aleutian Islands, and also the planning and procurement of construction machinery for his company's U. S. Army contracts in Africa and the Middle East. His important work includes the construction of Long Island's Sunrise Highway, Jones Beach Ocean Boulevard, and other parkway projects.

CONSTRUCTION ACTIVITY



As Reported This Week to *Engineering News-Record*

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Jan. 3 1946	Cumulative 1946 (1 wk.)	Cumulative 1945 (1 wk.)
Federal	$2,179	$2,179	$6,373
State & Mun.	14,474	14,474	6,255
Total Public.	$16,653	$16,653	$12,628
Total Private	26,642	26,642	16,181
U. S. Total.	**$43,295**	**$43,295**	**$28,809**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Type of Work	Dollar Volume (Thousands) This Week	Cumulative 1946 (1 wk.)	Cumulative 1945 (1 wk.)
Waterworks	$215	$215	$289
Sewerage	314	314	570
Bridges	3,060	3,060	2,747
Highways	4,334	4,334	4,972
Earthwork, Waterways	1,507	1,507	197
Buildings, Public	6,519	6,519	4,309
Industrial	7,543	7,543	12,629
Commercial	18,144	18,144	675
Unclassified	1,659	1,659	2,421

NOTE: Minimum size projects included are: Waterworks and waterway projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1946 (1 wk.)	Cumulative 1945 (1 wk.)
NON-FEDERAL		$5,552
Corporate Securities	New	....
State and Municipal	data	5,552
RFC Loans		....
REA Loans	not	....
Fed. Aid Highway	available	....
FEDERAL		77,137
Total Capital		$82,689

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Dec. '45	313.48	150.69
Building Cost	Dec. '45	240.82	130.18
Volume	Nov. '45	173	76

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *DARWIN R. DAY, Statistics* *J. A. MAHONEY, Reports*

(Daily service also available—Write for details)

WATER SUPPLY

BIDS ASKED

Bids Asked January 15

La., Point-a-la Hache — Police Jury of Plaquemine Parish, Court House Bldg., 300,000 gal. elevated riveted steel water tank on 100 foot tower. J. C. De Armas, 8004 Hickory St., New Orleans, engr.,

Bids Asked January 23

N. C., Gastonia—City, H. Rutter, mgr., City Hall, WW pump. equip. Wm. Platt, P.O. Box 971, Durham, engr. CD 7/28/44—ENR 8/10/44, under Postwar Projects.

Bids Asked February 11

Va., Charlottesville—City, S. Burnley, mgr. and engr., City Hall, 80x500 ft.., concrete storage reservoir dam. Plans deposit $25. CD 2/7—ENR 2/22, under Postwar Projects.

LOW BIDDERS

Ore., Aloha—Huber Water Dist., c/o Huber Commercial Club, Aloha, Dec. 18, replacing exten. 35 mi. water lines, from O. L. Soule, Elma, Wash. **$174,762.** Est. $200,000. CD 12/11.

★**Tex., Dallas**—City, c/o E. Goforth, secy., City Hall, rejected bids Dec. 19, expan. Bachman Water Purification plant. L. B. **$2,168,000.** CD 12/18—ENR 12/20, under LB.

CONTRACTS AWARDED

Conn., Southington — Town, Waterworks Dpt., S. H. Bowers, supt., Southington, 1 story, 40x100 ft. shop, and 34x45 ft. office bldg., brick, steel, High St., to P. Delahanty, Meriden Ave. Est. **$40,000.**

Tex., San Antonio—Thrift Lumber Co., 708 W. Summit St. c.i. waterlines, Olmos Place subdivision development. Owner builds. **$20,000.** Bids after 11/15. CD 11/7—ENR 11/15.

Tex., San Antonio—Travis-Soledad Corp. & Assoc., Travis Bldg., c.i. water lines, own forces. **$20,000.** CD 12/13—ENR 12/27.

Tex., San Antonio—Woodlawn Home Sites, c/o G. French, 1300 Donaldson Ave., c.i. waterlines, **$18,000;** sanitary sewer lines, **$30,000,** own forces; building streets and asphalt paving, to Schwope Bros., 1014 W. Laurel St., approx. **$35,000.** CD 12/19.

Que., St. Bruno—Municipality, c/o Mayor E. Dulude, St. Bruno, aqueduct, day labor. Over **$50,000.**

Que., St. Simeon—Municipal Council, aqueduct, day labor. **$120,000.**

SEWERS, WASTE DISPOSAL

BIDS ASKED

Bids Asked January 7

N. Y., Brooklyn—Supt. School Bldgs., Design and Constr., 49 Flatbush Ave. Exten., Zone 1, imprv. drainage sys., on site of Fort Hamilton High School, Shore Rd., between 83 and 85 Sts. and Narrows Ave. Plans deposit $2.

LOW BIDDERS

La., Denham Springs—Town, sewage collection and distr. sys., from Barnet Brezner, Alexandria. **$116,513.** CD 11/30—ENR 12/6.

Tex., San Antonio—Bexar Co. Water Control & Imprvt. Dist. 8, will not build disposal plant. **$25,000.** Project abandoned. CD 9/7—ENR 9/20, under Postwar Projects.

Wis., Milwaukee—City, City Hall, Dec. 20, combined sewer in W. Greenfield Ave., from O. P. Seefeld, 6610 N. Lake Dr., Zone 11, **$105,114;** sanitary sewer in easement thru Jackson Park, from Old Constr. Co., 802 Center St. Zone 12. **$62,375.** CD 12/3/43—ENR 12/9/43, under Postwar Projects.

CONTRACTS AWARDED

Tex., Navasota—City, sanitary sewer collection lines, own forces. **$30,000.** CD 7/12—ENR 7/19.

Tex., San Antonio—Thrift Lumber Co., 708 W. Summit St., sanitary sewer collection lines, Olmos Place sub-division development, to Truehart & Caldwell, 508 Am. Hos. & Life Ins. Bldg., **$25,000.** Bids after 11/15. CD 11/7—ENR 11/15.

Tex., San Antonio—Travis-Soledad Corp. & Assoc., Travis Bldg., sanitary sewers, own forces. **$30,000.** CD 12/13—ENR 12/27.

Location of ENR Correspondents

Symbols and Abbreviations Include:

✦	Federal Government
★	Project of $500,000 or over
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

BRIDGES

BIDS ASKED

Bids Asked January 8

Maryland—State Roads Comn., Baltimore, bridge over Spa Creek between Annapolis and Eastport, incl. removal of old bridge, Contr. AA 261-2-350.

Bids Asked January 10

Texas—State Hy. Comn., J. S. Redditt, chn., Austin, Sulphur Creek Bridge, grading, structures, flex. base and asphalt surface treatment 16.28 mi. Hy. 54-S115 (3) and (14), Culberson Co., $250,000; widening 5 multiple culverts on U. S. Hy. 59-F.426 (4), and 514 (8), Liberty and Montgomery Counties, $20,000; constructing Brazos River Bridge 0.226 mi. U. S. Hy. 67-F.902 (9), Somervell Co. $200,000.

Bids Asked January 23

Montana—State Hy. Comn., Helena, overpass carrying U. S. Hy. 10 across Great Northern R.R. tracks, Cascade Co., $100,000; bridge across Little Judith River between Lewistown and Denton, Fergus Co. H. W. Holmes, state hy. engr.

LOW BIDDERS

North Carolina—State Hy. & P. Wks. Comn., Raleigh, Dec. 18, structures, replacing washed-out bridges over Deep River on County Rd. between Glendon and Harpers Cross Roads, Betterment Section 6-7-55-11, and over Deep River, Sect. 6-7-55-12, Moore Co., from H. H. Stewart, 604 Hawthorne Lane, Charlotte, **$66,346,** and **$45,791** respectively; grading 0.87 mi. approaches to bridge over Deep River on County Rd. between Glendon and Harpers Cross Roads, Moore Co., from E. W. Grannis Co., Fayetteville, **$28,533.**

South Carolina—State Hy. Dpt., Columbia, 3 rein.-con. structural steel, treated timber bridges 1 over Broad Swamp, 1 over Clapp Swamp and other over Pudding Swamp, Williamsburg Co., from Wannamaker & Wells, Inc., Orangeburg, **$61,878;** 237.839 ft. rein.-con., structural steel bridge over Southern R.R. and asphaltic concrete surfacing 0.449 mi. bridge approaches Route 250, Greenville Co., from Cherokee, Inc., Columbia, **$105,649;** hot laid asphaltic concrete surfacing same road, from Pennell & Harley, Inc., Spartanburg, **$100,674.**

CONTRACTS AWARDED

★**California**—State Div. Hys., Pub. Wks. Bldg., Sacramento, bridge, overhead crossing, undercrossing and approaches over Feather River, at Marysville City and Yuba City and over Southern Pacific R.R. and Sutter St., Yuba and Sutter Counties, to J. H. Pomeroy & Co., Inc., 333 Montgomery St., San Francisco. **$1,879,341.** Bids 12/12. CD 12/8—ENR 12/20, under LB.

★**Maryland**—State Road Comn., Baltimore, Contr. W-204-2-627, steel superstructure and concrete deck rail, etc., for bridge over Potomac River at Sandy Hook, to Bethlehem Steel Co., Sparrows Point, **$769,662.** CD 11/9—ENR 11/15, under LB.

STREETS AND ROADS

BIDS ASKED

Bids Asked January 7

Connecticut—State Hy. Comn., Wm. J. Cox, comr., Hartford, bituminous macadam surfacing 12,573 ft., Milford-Bridgewater, Plans deposit $17.51; 3,152 ft., Route 12, at Deadman's Curve, Ledyard, Plans deposit $4.59.

Bids Asked January 8

Wisconsin — State Hy. Comn., Madison, constructing Union Center-New Lisbon-Necedah Rd., New Lisbon Bridge, S. P. 4886, State Trunk Hy. 80, Juneau Co.

Bids Asked January 10

★**Texas**—State Hy. Comn., J. S. Redditt, chn., Austin, flex. base and double asphalt surface treatment 10.657 mi. Hy. 24, F.756 (2), Collins Co., $250,000; 10.672 mi. Hy. F. M. 51-S874 (5), Cooke Co., $80,000; grading, structures 18.938 mi. Hy. 86-FAS 7 (5), Parmer Co., $120,000; 10.179 mi. U: S: Hy. 190-F. 1034 (3), Polk Co., $200,000; 9.075 mi. U. S. Hy. 190, F 767 (4), San Saba Co. $200,000; grading, structures, flex. base and base preservative 4.374 mi. Hy. 108, S. 285 (1), Erath Co., $8,000; grading, structures, flex. base and single asphalt surface treatment 9.761 mi. Hy. F. M. 53-S 114 (2), Coleman Co., $120,000; 3.373 mi. Hy. F. M. 53—D 846 (4) and (5), Taylor and Runnels Counties, $40,000; 5.678 mi. State Hy. 201 (1), Hy. FM 612, Scurry Co., $40,000; 19.809 mi. F. M. Hy. 285—S 296 (1) and (2), Randall and Armstrong Counties, $120,000; 5.391 mi. Hy F. M. 43—S 195 (1), Menard Co., $80,000; 14.754 mi. Hy. FM 33-S. 318-(1), Glasscock Co., $80,000; 11.83 mi. F. M. Hys. 668, 609, and 67-S. 322 (1) and 733 (3), Fisher Co., $160,000; concrete paving 7.503 mi. U. S. Hy. 59, F-326 (5), Fort Bend Co., $250,000; grading, structures, flex base and double asphalt surface treatment 0.435 mi. U. S. Hy. 82-F595 (16), $40,000; 9.188 mi. Hy. F. M. 103-S 46 (1), both Montague Co, 17.116 mi. Hy. F. M. 76, S. 414 (1), El Paso Co., $160,000.

Bids Asked January 15

Alberta—H. W. A. Fallow, Dpt. P. Wks., Edmonton, constructing highway from Grimshaw to Great Slave Lake, for Province of Alberta, Edmonton. Dpt. P. Wks., Edmonton, engrs.

Bids Asked January 15

★**Alberta and Northwest Territory**—Dpt. P. Wks., Edmonton, Alta., and Dpt. Mines & Resources, Ottawa, Ont., 380 miles all weather road from Grimshaw, Alta. to Hay River Settlement on Great Bear Lake, N.W.T. $8,000,000. CD 11/21—ENR 12/13.

Bids Asked January 23

Montana—State Hy Comn., Helena, surfacing 9 mi. Lavina-Broadview Rd., Golden Valley and Yellowstone Counties; grading, surfacing, oiling 6.5 mi. east of Moore, Fergus